

Appl. No. : 10/007,003
Filed : November 9, 2001

AMENDMENTS TO THE CLAIMS

Listed below are the changes made to the claims, in which the insertions are underlined and deletions are shown by strikethrough. The listing of claims below replaces all prior versions and listings of claims in the application. The listing of claims presents each claim with its respective status shown in parentheses.

Please amend the claims as follows:

1. (Currently Amended) A distributed file storage system comprising:
 - a set of ~~at least four~~ storage modules in communication with each other, the set including:
 - a first storage module including a processing module;
 - a second storage module including a processing module;
 - a third storage module including a processing module; and
 - a fourth storage module including a processing module;
 - a file stored on the distributed file storage system;
 - a first file portion of the file comprising a first set of file data stored in the first storage module; [[and]]
 - a second file portion of the file comprising a second set of file data stored in the second storage module, wherein the second set of file data is different from the first set of file data;
 - a first metadata related to the location of the file stored on the first storage module, the second storage module, the third storage module, and the fourth storage module;
 - a second metadata related to the location of the file stored on at least one of the first storage module, the second storage module, the third storage module, and the fourth storage module; and
 - a switch module in communication with the set of storage modules, the switch module configured to receive a read request for the file stored on the distributed file storage system and to send the read request to any one of the set of storage modules;
 - each of the set of storage modules capable of using the first metadata to respond to and implement the read request on behalf of the distributed file storage system.

Appl. No. : 10/007,003
Filed : November 9, 2001

~~error correction data related to the file comprising at least a first error correction data related to the first file portion;~~

~~a first program module stored in said distributed file storage system and in communication with the set of storage modules configured to:~~

~~dynamically select from the set of storage modules a first storage module on which to store the first file portion;~~

~~dynamically select from the set of storage modules a second storage module on which to store the second file portion, wherein the first storage module is different from the second storage module;~~

~~dynamically select from the set of storage modules a third storage module on which to store at least a portion of the metadata, wherein the third storage module is different from the first storage module and the second storage module;~~
~~and~~

~~dynamically select from the set of storage modules a fourth storage module on which to store the first error correction data, wherein the fourth storage module is different from the first storage module and the second storage module;~~
~~wherein the dynamic selection is based on at least one of performance, available capacity, and throughput of the set of storage modules; and~~

~~a second program module stored in said distributed file storage system and in communication with the set of storage modules configured to dynamically update the metadata to indicate which of the set of storage modules on which the first file portion, the second file portion, and the first error correction data are stored.~~

2. (Currently Amended) The distributed file storage system of Claim 1, further comprising error correction data related to the file, the error correction data stored in the distributed file storage system, ~~a third program module stored in said distributed file storage system and in communication with the set of storage modules.~~

3. (Currently Amended) The distributed file storage system of Claim [[1]] 2, wherein the error correction data includes parity information.

4. (Currently Amended) The distributed file storage system of Claim 3, wherein the parity information includes parity data blocks and location information indicating where

Appl. No. : 10/007,003
Filed : November 9, 2001

~~which of the set of storage units on which the parity data blocks are stored, wherein such location information may be later used to retrieve the parity blocks, and wherein the second metadata further indicates the location information.~~

5. (Currently Amended) The distributed file storage system of Claim [[1]] 2 wherein the error correction data includes redundancy data related to the file, and wherein the second metadata further indicates the location of the redundancy data.

6. (Currently Amended) The distributed file storage system of Claim 5, wherein the first metadata related to the location of the file includes metadata related to the root directory. ~~the first program module is further configured to dynamically select from the set of storage modules a fifth storage module on which to store a copy of the first file portion in real time, and wherein the second program module is further configured to dynamically update the location of the copied first file portion in the metadata, wherein the fifth storage module is different from the first storage module and the third storage module.~~

7. (Currently Amended) The distributed file storage system of Claim 1, wherein each of the storage modules are configured further comprising a third program module stored in said distributed file storage system and in communication with the set of storage modules configured to receive a request to and initiate the request to move the first file portion in real-time from the first storage module to the third a fifth storage module in the set of storage modules, and to send a request ~~the second program module is further configured to update the second metadata to indicate the location of the moved first file portion.~~

8. (Currently Amended) The distributed file storage system of Claim 1, wherein each of the storage modules are configured further comprising a third program module stored in said distributed file storage system and in communication with the set of storage modules, said third program module configured to receive a request to and initiate the request to replicate the first file portion in real-time and to store the replicated first file portion on the third a fifth storage module in the set of storage modules, and to send a request ~~the second program module is further configured to update the metadata to indicate the location of the replicated first file portion.~~

9. (Currently Amended) The distributed file storage system of Claim 8, ~~the third program module further configured to replicate the first file portion in response to a high volume~~

Appl. No. : 10/007,003
Filed : November 9, 2001

~~of requests for the data 1, wherein the second metadata includes metadata related to the locations in which the file data is stored.~~

10. ~~(Currently Amended)~~ The distributed file storage system of Claim 8, ~~the third program module further configured to replicate the first file portion in response to high utilization of the hardware which stores the data 1, wherein the second metadata includes metadata related to a parent directory of the file.~~

11. (Previously Presented) The distributed file storage system of Claim 1, further configured to handle more READ requests than WRITE requests.

12. (Previously Presented) The distributed file storage system of Claim 1, further configured to handle block transactions.

13. – 42. (Cancelled)

43. (Currently Amended) The distributed file storage system of Claim 1, wherein the file has been stored on a number of the storage modules of the set of storage modules, wherein the number is determined specifically for the file, and wherein the number is equal to or greater than two.

44. – 58. (Cancelled)

59. (New) A system for storing data comprising:

a plurality of data storage units, each data storage unit having a processor module associated therewith;

a switch module in communication with said plurality of data storage units, said switch module configured to route read queries to and receive responses from any one or more of said plurality of data storage units;

each of said plurality of data storage units having sufficient information about where data is stored on all of said plurality of data storage units to respond to and implement read commands on behalf of the system including all of said plurality of data storage units, wherein said system is configured to ordinarily store an incoming file across more than one of said plurality of data storage units and said switch module may select any one of said plurality of data storage units to receive read queries on behalf of the system.

Appl. No. : **10/007,003**
Filed : **November 9, 2001**

60. (New) The system of Claim 59, wherein said plurality of data storage units are configured to store multiple types of data.

61. (New) The system of Claim 59, wherein said plurality of data storage units are configured to allow the addition of a new data storage unit in real-time while said plurality of data storage units continue to respond to and implement read commands on behalf of the system.